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Source evaluation and selection for interpretation in Sequoia and Kings Canyon National Parks

Lacey Elizabeth Moore

SOURCE EVALUATION AND SELECTION FOR INTERPRETATION IN SEQUOIA AND KINGS CANYON NATIONAL PARKS

A Project

Presented to the

Faculty of

California State University,

San Bernardino

In Partial Fulfillment

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in

Education:

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ABSTRACT

This work consists of guidelines to aid interpreters in evaluating sources (research material) for use in interpretative presentations and programs in Sequoia and Kings Canyon National Parks.

The guidelines consist of six key attributes, subsequent characteristics, and questions that interpreters can use to evaluate the quality of a source used in creating interpretive programs and product development. A rubric is provided to assist in evaluating the sources attributes with a numerical level. This allows for consistency in source evaluation and comparison.

Although this work is designed for interpreters in Sequoia and Kings Canyon National Parks, other National Park interpreters may find the guidelines useful in selecting high quality, relevant sources.

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So many people were helpful in the production and completion of this work. Dr. Darleen Stoner, my program advisor, patiently waded through my many project ideas as well as the tedious long-distance editing of the text while encouraging me to "be done with it." Dr. Nancy Muleady-Mecham, a great friend and mentor, provided me with guidance as well as insightful suggestions and advice. She is one who maintains humility and warmth while managing to "do it all" and inspiring others to greatness. Melanie Rawlins, permanent interpretive National Park Service ranger, listened to and collaborated with all of my ideas while making suggestions and giving me feedback. She is an excellent coworker and friend. I'd like to acknowledge everyone else at Sequoia and Kings Canyon National Parks who aided me in this work: Val Pillsbury, Paul Pfenniger, Mary Anne Carlton, Erik Oberg, Richard Ullmann, Kay Woods are just a few of the many people who gave me suggestions, ideas, and support.

DEDICATION

To

David, my best friend, spouse, co-conspirator and adventurer. Thank you for ensuring my sanity while supporting me throughout my adventures in graduate school and in life.

And to my parents, who instilled in me the value of both education and adventure and who have proven they will support me to "all corners of the earth."

I love you.

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CHAPTER ONE

INTRODUCTION

> The early Greek philosophers looked at the world about them and decided that there were four elements: fire, air, water, and earth. But as they grew a little wiser, they perceived that there must be something else. These intangible elements did not comprise a principle; they merely revealed that somewhere else...there was a soul of things—a fifth essence, pure, eternal, and inclusive. We believe that wild places like our national parks are the "soul" of the earth. (Degolia & Zarki, 1987, p. i)

The National Parks of America embody raw natural beauty as well as cultural and historical heritage. Since their establishment in the 19th century, these natural and cultural resources have also provided fond memories for millions of visitors. Set aside to protect and preserve natural, historical, and cultural resources, they are visited by literally hundreds of millions of people from around the world on a yearly basis.

To provide a connection to the soul and meanings of the resource, park interpretive rangers present programs

to park visitors to provoke understanding, enhance appreciation and foster protection. Interpretation is defined by the National Park Service as, "Programs, media, and conversations that provide opportunities for audiences to form their own emotional and intellectual connections to [specific park] resource meaning and significance through the cohesive development of a relevant idea or ideas" (Larsen, 2003, p. 198). To facilitate these connections and to develop a cohesive and relevant idea, interpreters need knowledge. Knowledge of their audience and knowledge of techniques of communication are essential. A comprehensive knowledge of their resource (the object of interpretation) plays perhaps the most fundamental role.

The purpose of this work is to improve the accuracy and quality of interpretation. It does so by addressing an interpreter's effective and accurate acquisition of knowledge of the resource. Specifically, this paper discusses the role of interpretation in National Parks and compares it with other disciplines. It also examines interpretation specifically in terms of the communication of credible information and the importance of the identification and evaluation of relevant source material. The Content Guidelines for Interpretive Excellence

(Appendix) were developed to aid interpretive professionals in the selection, evaluation, and effective use of quality sources (research material) in interpretive programs and products.

Sequoia and Kings Canyon National Parks (SEKI) serve as the example parks in this work. It is easier to illustrate concepts of interpretation and the need for quality sources in interpretation with examples from actual parks. Many of the management documents cited and specific goals of interpretation included are sourced from SEKI. The guidelines were developed with SEKI in mind as well. This work is pertinent, however, to interpretation in all National Parks.

If source material is easier to access and a consistent method of evaluation is available, interpretive rangers will have correct facts to put in context with the overall story. This increases quality interpretive opportunities and helps the visitors find meaning in the resource for themselves. It will also allow interpreters to gain a more comprehensive knowledge of the resource.

The First National Parks and the Organic Act

In order to understand the origin of contemporary interpretive programming in the NPS, it is essential to

understand the conception of National Parks themselves. National Parks came into existence when the idea of preservation was still a radical concept. The idea of protecting certain pieces of land from human use seemed absurd. An artist by the name of George Caitlin, in the 1830s on a trip to the Dakotas, wrote of his dream that "by some great protecting policy of the government preserved...in a magnificent park...a nation's park, containing man and beast, in all wildness and freshness of their nature's beauty!" (in Mackintosh, 1999, para. 2).

In 1864, the state of California hosted the first large tract of protected land. Yosemite and the Mariposa Grove of giant sequoias became "...held for public use, resort, and recreation...inalienable for time" (Winks, 1997, para. 3). In 1872, the Yellowstone region in the Montana and Wyoming territories received the distinction of the first federally managed (and protected) parcel of land in America. The first of its kind not only in America but also in the world and with no state government there yet to receive and manage it, Yellowstone remained in the custody of the U.S. Department of the Interior as a national park (Mackintosh, 1999, para. 4).

Congress followed the Yellowstone precedent with other national parks in the 1890s and early 1900s,

including Sequoia, Yosemite, Mount Rainier, Crater Lake, and Glacier. Many National Park historians point out that the idealistic impulse to preserve nature was often also economic in nature. Western railroads lobbied for many of the early parks and built grand rustic hotels in them to boost their passenger business. Sometimes farmers were responsible for the protected status granted to certain parcels of land. Besides being altruistically motivated, the farmers needed the watersheds the parcels encompassed for farmland irrigation. People who hunted and fished wanted well-stocked, public protected land to recreate on (Sellars, 1997, p. 19).

In the early years of National Parks, the Army accepted requests from Interior secretaries to manage the land. The military built roads and buildings, enforced regulations against hunting, grazing, timber cutting, and vandalism, and did their best to serve the visiting public (Farquhar, 1965, p. 206). The effectiveness of military administration proved questionable. Few of the military officers who served as early park superintendents served more than two consecutive summers which resulted in a lack of long term planning. Also Congress appropriated almost no funds for park development and the War Department invested little in supporting its troops (Dilsaver &

Tweed, 1990, p. 86). Most times the troops only arrived to administer the parks for the summer as well. In response to this ineffective system, as early as 1898 civilian guards or rangers were appointed by the Department of the Interior to assist in protecting the parks. Over the next several years, the Department of the Interior supported a small but permanent civilian ranger corps (Dilsaver & Tweed, 1990, p. 89). Many people, including military officers assigned to the parks, recommended initiation of a completely civilian parks administration (Dilsaver & Tweed, 1990, p. 101). By 1916, the Department of Interior oversaw 14 national parks and 21 national monuments--but without a centralized or arguably effective administration. In that year, Congress moved to create a new bureau within Interior to provide a consistent system of administration. The Organic Act of 1916 called for the National Park Service to "conserve scenery and other park resources and to provide for the enjoyment of such resources by such means as will leave them unimpaired for the enjoyment of future generations" (Winks, 1997, para. 2).

The Roots of Interpretation in the National Park Service

The Organic Act, oftentimes called a contradictory mandate, posed a problem for early park management. Juxtaposed in both a complementary and conflicting relationship, the words unimpaired and enjoyment challenged (and still challenges) park administration in the creation of a balance between the two provisions. As park visitation increased exponentially, one way in which this mandate was tackled consisted of the establishment of an education department a year after the National Park Service was established in 1916 (Lewis, 2001, p. 17). Stephen Mather, the director of the park service at that time had already begun releasing radio addresses, newspaper articles, and public speeches to promote the parks. He wished to make people's visits to the parks more meaningful. In 1920, Yosemite experienced the inauguration of a naturalist program (Strong, 2000, p. 38). In 1922, Sequoia became one of only a few parks to have an education program. Two years later, Sequoia National Park introduced the Sequoia Nature Guide Service. A local judge and the first civilian superintendent of Sequoia, Walter Fry, led the first naturalist walks and eventually began presenting campfire programs and displaying assorted

specimens of Sequoia National Parks flora and fauna. By 1929, the popularity of this guide service had led to the recruitment of three new seasonal naturalists and a permanent park employee who filled the role of a full time nature guide and had presented programs to an estimated 71,000 visitors (Dilsaver & Tweed, 1990, p. 121). As attendance boomed, many tourists "came to regard the walks, talks, and museum displays as the most obvious and appropriate role of the national parks" (Dilsaver & Tweed, 1990, p. 124).

Significance of Sequoia and Kings Canyon National Parks

Established in 1890 (even before the National Park Service came into existence in 1916), Sequoia National Park holds the reputation of the second oldest National Park in the United States and the first oldest National Park in the state of California. Expanded in size over six times since creation, Sequoia National Park is now administered jointly with King's Canyon National Park (formerly Grant's Grove National Park) and encompasses 865,952 acres in the southern end of the Sierra Nevada. Almost 85 percent (over 723,000 acres) of Sequoia and Kings Canyon National Parks (SEKI) is designated as

wilderness and only accessible by foot (SEKI, 2004b, p. 32).

The resources of SEKI are significant for a variety of reasons. These parks contain the largest trees in the world, the Giant Sequoias. They also preserve an astonishing spectrum of ecosystems dispersed along the greatest vertical relief (1,370 feet to 14,431 feet of elevation) of any protected area in the lower 48 states (NPS, n.d., SEKI: Natural Resources, para. 2). Encompassed within park boundaries is the highest, most rugged portion of the High Sierra, deep glacially-carved canyons and the core of the largest area of designated wilderness in California--the second largest in the lower 48 states (NPS, n.d., SEKI: Natural Resources, para. 8). SEKI also has the largest preserved southern Sierran foothills ecosystem, over 200 known marble caverns and hosts over 30 known prehistoric and historic sites (Carlton, 2003, p. 2).

Sequoia and Kings Canyon National Parks are home to 1,469 identified plant species (48 of which are tree species) and 80 identified species of mammals. There are also identified 13 species of amphibians, 207 species of birds, 11 species of fish, 24 species of reptiles, and many species of invertebrates (NPS, n.d., SEKI:

Vertebrates Species List). On October 26, 1976, Sequoia and Kings Canyon National Parks were designated Biosphere Reserves by the United Nations Educational, Scientific, and Cultural Organization recognizing the area as one that "conserves all of the representative ecosystems of a particular natural region. It contains the greatest possible diversity of physical and biological resources" (Carlton, 2003, p. 2).

Problem Statement

Every year SEKI receives an average of 1,500,000 visitors (NPS, n.d., Facts, para. 2). In 2004, there were 277,000,000 people who visited the other three hundred and eighty seven units of land managed by the National Park Service (NPS, 2004, para. 7). Interpretive rangers encounter many of these visitors and try to foster an understanding and appreciation of the resource and in turn an ethic of preservation. Informal information provided on trails, in visitors centers, and other in-park locations as well as theme based walks and talks and informational brochures and guides are the methods in which interpretive rangers reach out to the public. Hundreds of documents, journal articles, research papers, periodicals, and other publications are available to interpretive rangers to aid

in the development of interpretive programs and accumulation of relevant information. The amount of available sources is oftentimes overwhelming. Numerous publications overlap in subject matter and give contradictory facts and information. The selection of inaccurate and inappropriate sources can lead to irrelevant programs, inaccurate facts, and in general a misleading or false public perspective of the resource.

Purpose of Study

The purpose of this study is to aid interpreters in evaluating sources (research material) for use in interpretive presentations and programs in Sequoia and Kings Canyon National Parks. This was done by illustrating the need for source evaluation and then developing the guidelines for selecting, evaluating, and most effectively using various sources in the development of interpretive programs in the NPS. It demonstrates how to apply these guidelines by utilizing a rubric (a formal and measurable means of evaluation) for methodological and consistent assessment. This work recognizes and supports the idea that "insuring that our interpretation is relevant and contemporary requires frequent reevaluation of existing facts, identification of new sources, consideration for

different points of view, and reconsideration of past themes" (Division of Interpretive Planning, 1998, p. 30).

Though this work utilizes SEKI as example parks, the guidelines are useful for all other NPS parks. They are designed to make existing information more accessible and to facilitate the consistency and accuracy of interpretation in the NPS. This work takes a first step in the development of a consistent method to evaluate interpretive materials and aid interpreters in gaining a more comprehensive knowledge of the resource.

Uniqueness of Study

There are no pre-existing guidelines for the selection and evaluation of potential interpretive sources. There has been much written about interpretive technique, acquiring a knowledge of the audience, and the importance of conducting quality research in interpretive program development. There has not been as much written on how to develop a more comprehensive knowledge of the resource or by which criteria to select sources for use in interpretive program development. The guidelines and the rubric for evaluation quantify and make consistent the quality of sources used in interpretation. Also, in the development of these guidelines, a comprehensive

understanding of interpretation and complementary disciplines was essential. The North American Association for Environmental Education (NAAEE) developed guidelines for the evaluation of environmental education materials. This document was invaluable in the development of guidelines for the evaluation of interpretive sources. The guidelines thus come from the merging of interpretive and environmental education philosophies and methodologies.

Scope

It is the hope of the author that these guidelines will be applicable not just to the interpretive division of SEKI but also to the entire NPS interpretive division. It is intended for the use of park management, interpretive staff, and anyone else interested in identifying accurate and quality bound resources that help to gain a deeper, broader, and more scientific understanding of the resources of the NPS. The guidelines are also written in a manner that allows them to be adapted by other organizations practicing interpretation.

It is also the hope of the author that these guidelines may be published on the web so they will be more accessible and broader reaching. Ideally, the park interpreters and others doing research on the resources of

the National Parks will be able to access the electronic version of these guidelines in order to expand accurate knowledge on our natural resources and protect and preserve our National Parks as well as our environment in general.

CHAPTER TWO

HISTORICAL PERSPECTIVE OF INTERPRETATION AND ENVIRONMENTAL EDUCATION

A Context for National Park Service Interpretation: Roots, Shoots, and Complementary Disciplines

Interpretation is defined by the National Association for Interpretation (NAI) "as a communication process that forges emotional and intellectual connections between the interests of the audience and the inherent meanings in the resource" (2005, para. 1). The following literature review is provided to give a historical and cross disciplinary context to NPS interpretation. By examining the roots of interpretation as well as its relationship to environmental education, interpretive professionals are able to benefit from other existing methodologies and resources. The importance of accurate and well researched interpretation is also illuminated in this chapter demonstrated by the influence interpretation has had on people's behaviors and attitudes.

The Interpretive Profession in the National Park Service

The theory of interpretation for the National Park Service is "through interpretation, understanding; through

understanding, appreciation; through appreciation, preservation" (NPS, 2003b, para. 2). According to the interpretation and education website for the National Park Service, interpretation is the process of helping each park visitor find an opportunity to personally connect with a place (NPS, n.d., The Learning Center, para. 2). A website developed for people interested in park careers describes NPS interpretive duties as "...primarily responsible for basic interpretive programs, informational contacts at visitor centers, reception desks, kiosks, and roving contacts at national park sites" (NPS, n.d., The Learning Center, para. 3). Interpreters are the face of the National Park Service.

The role of a public liaison leads to much responsibility. As well as assisting the visitor in developing a keener awareness and appreciation of the protected area, interpreters are expected to accomplish management goals by encouraging the thoughtful use of the resource and minimizing human impact. The promotion of public understanding of the National Park Service's goals and objectives is also part of their job description (Sharpe, 1982, p. 20-21). Interpreters are accountable for giving out accurate information to visitors and are evaluated by supervisors on presenting a variety of

interpretive programs, staffing visitor center desks, and effectively communicating with supervisor(s), coworkers, and visitors.

The National Park Service hires both temporary and permanent interpretive rangers. Temporary rangers work under a contract for a specific period of time and/or hours on the job. Term positions are full time positions that last for a predetermined amount of time. Seasonal positions can range up to six months or 1039 hours. Permanent rangers are not contracted for a specific period of time. Their careers can last for many years. Permanent rangers have considerable influence in determining the path of interpretation.

Roots of Interpretation and Environmental Education

The contemporary profession of interpretation occurs not only in National Parks but in many other venues as well. Interpretation generally refers to any on-site informal education programs at parks, zoos, nature centers, historic sites, museums, and aquaria (NAI, 2005, para. 1). It involves translating the technical language of a natural science or related field into terms and ideas that people who are not scientists can readily understand (Ham, 1992, p. 3). By examining interpretation's origin, a

more comprehensive understanding of current interpretive philosophy and methodology can be obtained. Along with progressivism, constructivism, nature study, the concept of ecology, outdoor education and conservation education, it is an approach to environmental education (EE). By understanding the similarities and differences between these many approaches to environmental education, interpretive professionals can benefit from other existing methodologies and resources.

Earliest Environmental Education

The lives of early humans were connected inextricably to nature as the insulation of modern technology did not exist. Before the development of the written word, original objects, learning by doing, and illustrative media were the only tools people had for education. Actual EE methodology is linked all the way back to Greek philosophers such as Socrates (ca. 470-399 B.C.), who advanced inquiry and experiential learning as a path toward knowledge, and Plato (ca. 428-348 B.C.), who emphasized the efficacy of learning by doing (Jacobson, 1999, p. 224).

Educational Theory: Progressivism and Constructivism

Later educational theorists also shaped the direction of contemporary interpretation and environmental education. In the 1600s, John Comenius promoted the importance of sensory learning and used a garden as a primary method of instruction (Freeburg & Taylor, 1961, p. 185). In the 1930s, a progressive education movement led by John Dewey took place that included curriculum reforms in the formal educational system stressing a more holistic approach to learning. Progressive educators believed that education was more than preparation for life; it was a significant aspect of life. It encompassed "learning by doing which neatly incorporated learning about the environment in the environment" (Braus & Disinger, 1996, p. 11). Current American educational theory for both children and adults is based on constructivism. This is a theory of learning based on the premise that each person brings past experiences and beliefs, as well as own cultural histories and world views, into the process of learning. This theory incorporates different learning styles and flexibility into education leading each learner to construct his or her own reality of knowing (Braus & Disinger, 1996,

p. 12). Interpretation in National Parks recognizes the multiple learning styles each individual visitor possesses in the development of interpretive programs.

Nature Study and an Emerging Conservation Ethic

The advent of the 19th century brought many significant changes to the scope and approaches of interpretation and environmental education. In the 1800s and early 1900s, people were still exploring the United States and the "West" and resources were often thought of as limitless and endless. The natural world was something to be conquered or subdued. Some however observed the effects of American westward expansion and were concerned about receding "wild areas," loss of revolutionary landmarks and destruction of pre-historical artifacts (MacKintosh, 1999, para. 3). People such as Frederick Olmstead and George Perkins recognized the dangers of an expanding population devoted to economic profit. In 1865, Frederick Olmstead wrote, "the preservation of natural environments is no less immune to human greed and self-indulgence. For every voice of conscience there will always be its counterpart, pleading that preservation has gone too far" (in Runte, 1998, p. 26). Henry Thoreau emerged with his book Walden and soon thereafter outdoor clubs such as the Boone and Crockett Club (now National

Audubon Society) started lobbying for the protection of the environment. Avid sportsmen, they wanted the outdoors clean for hunting and fishing. Other private citizens began experimenting with the propagation of fish and planting of trees (Strong, 2000, p. 1). Nature study, the forerunner of contemporary science education in elementary schools, was introduced into the American school system in the late 1800s. This method of education stressed learning through direct and/or first-hand observation with detailed inquiry and discovery approaches (Braus & Disinger, 1996, p. 10).

Ecology, Conservation Education, and Outdoor Education

The majority of people in the United States in the early 1900s still envisioned the resources of the earth as limitless. However the scientific field of ecology emerged and paralleled the development of American conservation education in the 1930s (Mackintosh, 1986, para. 4). This new concept of relationships, interdependence, and a systematic whole when combined with the dust-bowl droughts of 1934 and 1936 awakened Americans to the need to evaluate and redevelop land management and conservation practices (Braus & Disinger, 1996, p. 12). Several natural resource agencies (U.S. Forest Service, National Park

Service, U.S. Geological Survey, U.S. Soil Conservation Service, U.S. Fish and Wildlife Service) addressed this need by developing programs that educated the general public in environmental problems, the importance of natural resource conservation, as well as the idea of ecology (Braus & Disinger, 1996, p. 10).

Interpretation and Environmental Education: Stewardship and Scope

The contemporary field of interpretation (known first as naturalism) arose out of conservation education. Along with nature study, progressive and constructivist educational theory, and outdoor education, it is an approach or a combination of approaches to education enveloped under the blanket term of environmental education. Professor Bill Stapp in 1969, is credited with developing the most widely used and accepted definition of environmental education with his students at the University of Michigan. "Environmental education is aimed at producing a citizenry that is knowledgeable concerning the biophysical environment and its associated problems, aware of how to help solve these problems, and motivated to work toward their solution" (Stapp et al., 1969, p. 30-31). The many approaches that contribute to the term environmental education all strive to increase the

knowledge, awareness, skills, and proclivity to positive action people have regarding the natural and built environment (Braus & Wood, 1993, p. 7). Thus interpretation and environmental education share many similar goals, methods, and ideologies but also differ in some ways.

In the National Park Service, the revelation of meanings through interpretation is essential to provoke the visitor to care about the resource (in National Park terminology, resource is used synonymously with the protected site itself). Larsen described the dialogue between a park interpreter and a professor of philosophy. The professor of philosophy tells the interpreter,

> Your goal is to facilitate a connection between the visitor's interests and what the place means. That's how you establish care about the resource. People have to care enough about the place to help care for the place. Care about happens first-attitude before behavior. Why take action to protect something you don't care about? Raising sensitivity-helping people care about is what interpretation does. (2003, p. 3)

Although the concept of developing a sense of stewardship unifies environmental education and

interpretation, one difference between environmental education and interpretation is in scope. The National Park Service has a mission statement the U.S. government expects it to uphold. Its goal is "...to promote and regulate the use of the ...national parks...which purpose is to conserve the scenery and the natural and historic objects and the wild life therein and to provide for the enjoyment of the same in such manner and by such means as well leave them unimpaired for the enjoyment of future generations" (Dilsaver & Tweed, 1990, p. 104). The NPS and other resource management agencies use interpretation as a tool to help people understand the processes and policies of management objectives as well as to help them to assimilate ecological principles (Jacobson, 1999, p. 187). In 1996, Braus and Disinger noted that governmental resource and environmental agencies like the NPS serve as great vessels for environmental education but oftentimes in a stance of "advocacy education." They "teach for the promotion of utilitarian natural resource and environmental management" (p. 16) yet have more freedom in teaching environmental concepts than venues such as formal classrooms due to the absence of federally or state regulated educational standards.

Environmental education is much more general in scope than interpretation. It can take place in a formal classroom environment; it can occur in a nature center; it can happen in a summer camp or even in one's own home. The goals of environmental education are to acquire knowledge, skills, and commitment applied through participation to ensure environmental integrity and quality of life (Braus & Disinger, 1996, p. 6). The goals of interpretation align with those of the agency in which the interpretation originates. For example, the mission of Sequoia and Kings Canyon National Parks is to "protect forever the greater Sierran ecosystem- including the sequoia groves and High Sierra regions of the park and their natural evolution - and to provide appropriate opportunities to present and future generations to experience and understand park resources and values" (SEKI, 2004a, p. 10). Thus SEKI's interpretive and educational goals are specific to this mission statement.

Understanding the origin of interpretation and its relationship with environmental education allows a practicing professional to "cross-train" and access other methodologies in environmental education. There are many great resources that exist for a wide spectrum of environmental educators whether they are employed as

National Park interpreters, classroom teachers, or museum docents.

Interpretation as a Management Tool: Changing Behavior and Increasing Stewardship

Interpretation has been used throughout the years as a tool to help a park accomplish its mission and management objectives. Several studies have been conducted demonstrating the effect interpretation can have on the attitudes and behavior of park visitors. According to several studies, vandalism, poaching, and other destructive behaviors such as littering, collecting souvenirs, and riding bikes on hiking trails have been decreased due to interpretation (Sharpe, 1982, p. 15-16). "Interpretive approaches also have increased compliance with park and reserve rules, increased support for management practices such as prescribed burns and feral animal control, and public safety" (Jacobson, 1999, p. 187).

Roggenbuck and Passineau conducted a study to assess the effectiveness of interpreter-guided field trips in changing behavior by increasing knowledge and building supportive attitudes. They discovered that a group of school children that visited a historic site at Indiana Dunes National Lakeshore showed a significant increase in

strength of attitudes toward protection and conservation of park resources and about visiting parks and historic sites. In addition, the children's behavioral intentions to not litter and to recycle also increased significantly (1986, p. 18).

Muleady-Mecham, Lee, and Burch conducted a public opinion survey on wildland fire in Grand Canyon National Park. After reviewing survey responses, they discovered that visitor demographics played a large role in people's opinions on the role of fire in protected areas. For example, females with children and no college education were more likely to believe fire should be prevented in U.S. National Parks than single males with graduate degrees. They ultimately concluded that specific groups of visitors may benefit from more specific information about the role of fire in the ecosystem and in turn encourage more universal public support of fires managed in National Parks (2004, p. 20).

Nielson and Buchanan (1986) conducted a study at Grand Teton National Park to compare the learning and attitude change benefits from interpretive programs on fire ecology and fire management. They found that an automated audiovisual slide program and a ranger-guided talk about fires while being in view of a recent burn

significantly increased visitors' knowledge of fire ecology and support for natural fire management (1986, p. 9).

Bob O'Brien in Our National Parks and the Search for Sustainability wrote that, "Responsible behavior follows education, which is both an essential element and one of the greatest benefits of [interpretation]" (1999, p. 118). The power of interpretation cannot be underestimated in its ability to influence behavior and change the attitudes of park visitors and the population in general.

In Summary

Interpretation occurs in many venues and intersects many different disciplines. Since the beginning of time, people have used interpretive methods to convey meanings, ideas, and philosophies. Contemporary interpretation is still evolving and especially in today's era of information, there is much possibility for the future of interpretation. The observation of interpretation's relationship to fields such as environmental education, allows interpretive professionals to access and borrow from other existing methodologies and resources. The ability of interpretation to influence behavior also reinforces the importance of accurate and well researched

interpretation. Incorrect messages too have the ability to influence people's actions and beliefs. This increases an interpreter's responsibility to present accurate information and balanced perspectives.

CHAPTER THREE

PARK MANAGEMENT AND CONTEMPORARY NATIONAL PARK SERVICE INTERPRETATION

Interpretation has been dynamic throughout its history. It has changed as the times have changed. The Depression, World Wars, women's rights, civil rights, the increased budget allowances in the 60s, an influx of environmental legislation in the 70s, struggles between agency and park level management, past and present administrations, fluctuation of budget, and many other things have affected the content, goals, and methodology of interpretation (MacKintosh, 1986, para. 2). Although individual interpreters have much control over program development and visitor contacts, contemporary interpretation adheres to a bigger picture. The bigger picture consists of an overarching vision for National Park Service interpretation as well as individual park management plans (NPS, 2000, p. 1). To conduct effective interpretation it is essential to understand this bigger picture.

The previous chapter presented a context for contemporary interpretation in the NPS by examining interpretation with a historical perspective and comparing

it to environmental education. It also cited examples of the power of interpretation as a tool in influencing and changing people's behaviors and attitudes. It provided insight into the complementary relationships interpretation has with other fields to give interpreters additional ideas for interpretive materials and methodology. The following chapter describes contemporary interpretation in the National Park Service, associated management plans and an overview of current professional standards. It also introduces importance of interpreters acquiring knowledge of the resource which is an integral part of the Interpretive Development Program (IDP) and the interpretive equation. This bigger picture perspective allows interpreters more ease and understanding in selecting information, facts, analogies and demonstrations to include in the development of an effective interpretive product.

General Park Management Plans and Comprehensive Interpretive Planning

Although all National Parks share one mission statement, "conserve scenery and other park resources and to provide for the enjoyment of such resources by such means as will leave them unimpaired for the enjoyment of future generations" (SEKI, 2004a, p. 10), each has its own

individual management plan and mission statement catering to the protection, preservation, and provision of enjoyment of its own specific resource. The mission statement of Sequoia and Kings Canyon National Parks is to "to protect forever the greater Sierran ecosystem including the sequoia groves and High Sierra regions of the park and their natural evolution - and to provide appropriate opportunities to present and future generations to experience and understand park resources and values" (SEKI, 2004a, p. 11).

A park's individual management plan, known as the general management plan (GMP), is a conceptual plan that identifies a desired condition of the resource and suggests actions needed to achieve this condition (SEKI, 2004a, p. 22). A strategic plan is both developed in accordance with both the overall NPS mission and the individual park mission. The strategic plan specifies a program to identify, protect, preserve, and enhance the natural and cultural resources of the specific parks. It draws upon appropriate legislation and NPS policy, as well as on knowledge of the resources and special needs of the park(s) (SEKI, 2004a, p. 44). The strategic plan as well as other implementation plans and annual performance/work

plans specify the methods for achieving the desired condition described in the GMP (SEKI, 2004a, p. 22).

The GMP is revised every 15-20 years in response to the changing conditions and needs of the park. Currently, the 1971 GMP of Sequoia National Park is under revision and a new draft has been created and is in the process of obtaining approval. Reasons for the development of a new plan includes lack of a comprehensive river management plan, an outdated master plan, changing management of additional cultural resources, unresolved issues for specific developed areas, conflict over special use permits on public land in Mineral King, and the changing context of parks in a regional ecosystem (SEKI, 2004a, p. 8).

Interpretive planning is addressed in National Park Service Management Policies under both "Park System Planning" and "Interpretation and Education." Policy states that interpretive planning is a vital component of the NPS planning process. According to policy, the strategic plan identifies park significance and establishes management objectives, including those for interpretation. The GMP defines desired resource conditions, desired visitor experiences, and any necessary development (SEKI, 2004a). Implementation plans, including

Comprehensive Interpretive Plans (CIP), provide the detail necessary to put the concepts of the GMP into action.

Contemporary Interpretive Planning in the National Park Service

> Interpretation is about choices. We choose what stories to tell, whom to tell them to, and how to tell them. While these choices are rarely easy, an effective planning system can guide our decision-making and help us to 'do the right thing.' (NPS, 2000, p. 3)

In 1995, the National Park Service adopted a unified planning system for interpretation and education. This system known as Comprehensive Interpretive Planning (CIP) took proven elements of interpretive planning and, for the first time, combined them as an integrated whole. The basis of CIP consists of the idea that,

> Sound interpretive planning defines desirable and diverse experiences, recommends ways to facilitate those experiences, and assures they are accessible. The outcome of interpretive planning is effectiveness in communicating the park's story in a larger context, ideas, meanings, and the values associated with the resources themselves, and achieving the balance

between resource protection and visitor use and enjoyment. (NPS, 2000, p. 6)

The CIP process is goal driven and park specific. The goals are rooted in a clear identification of the purpose and significance of the area. The purpose of the area addresses why the park was established and is based largely upon legislation. The significance describes the importance or distinctiveness of the area and its resources (NPS, 2000, p. 6). Thus the goals include effectiveness in communicating the park's story in a larger context, ideas, meanings, and the values associated with the resources themselves, and achieving the balance between resource protection and visitor use and enjoyment (NPS, 2000, p. 6).

The CIP planning system also shifted the responsibility for interpretive planning from a federal and regional level to the individual parks. In the past, interpretive planning had been centralized with an interpretive prospectus providing direction for the design and production of interpretive facilities and media. Programs and services however were linked with basic interpretive themes and management goals at a park level though they had to be approved by a regional director. The development of the CIP planning system united the

interpretive prospectus and the park specific programs and services (NPS, 2000, p. 2). Today the interpretive division of each park develops a plan specific to their own resources.

The heart of the CIP is the Long-Range Interpretive Plan (LRIP). The LRIP defines the overall vision and long-term (five to ten years) interpretive goals of the park. It also includes the development of primary interpretive themes or long-range interpretive themes (LRIT) based on the park's purposes, significance, and the primary park resources. These are the ideas that the park interpretive staff believes are critical to a visitor's understanding of the parks' significance. Interpreters incorporate these ideas into interpretive programs and convey them in every day visitor contacts. Sequoia and Kings Canyons have six existing long-range interpretive themes (LRIT) encompassed under their LRIP. One example of one of these themes is, "The natural resources of the southern Sierra Nevada have undergone a series of human uses and impacts as values for those resources have evolved" (SEKI, 2004a, p. 9). Another interpretive theme at SEKI is, "Because of the enormous topographic relief of the southern Sierra Nevada, the range creates a wide range of climates, shaping a diversity of interconnected

habitats, each of which is occupied by carefully adapted, interdependent organisms" (SEKI, 2004a, p. 9).

Realistic strategies and achievable yearly goals that work towards the achievement of the LRIPs are recorded in the second aspect of the CIP called the Annual Implementation Plan (AIP). The AIP is a one-year operating plan for the interpretive program. It is a working blueprint describing what interpretive services are offered to the public that specific year. It also includes budget and staffing information, actions and challenges, and a comparison of last year's program with this year's program (NPS, 2000, p. 8).

The last section of the CIP is the Interpretive Database (ID) which is a compilation of information needed to build the other two components. It includes media inventories, the park's strategic plan, enabling legislation, visitor surveys, reports, a bibliography, and other basic information (NPS, 2000, p. 4). Due to the fact that the CIP occurs at the individual park level, the comprehensiveness of the AIPs and IDs vary per park.

Interpretive Development Program and The Interpretive Equation

In 1996, the National Park Service developed an interpretive development program (IDP). This program

encompassed the first consistent standard for the NPS interpretive profession. Implemented "to tailor professional development efforts, increase efficiency, and demonstrate interpretation at a national standard," this program establishes professional accountability and certification for interpreters (NPS, 2003a, p. 1). Permanent interpreters need to successfully complete a series of competencies (curriculum based modules) to receive certification. The competencies include everything from achieving quality roving contacts to the development of a successful interpretive demonstration/illustrated program to conducting quality research in interpretation (NPS, 2003a, p. 1). The basis of these competencies is an "interpretive equation," which is the foundation of all program development, to aid interpreters in accomplishing the task of visitor and resource connection. The "knowledge of the resource" plus "knowledge of the audience" multiplied by "appropriate techniques" equals "interpretive opportunities" (NPS, 2003b, p. 2).

Knowledge of the resource begins with gathering a comprehensive collection of facts and information relevant to the resource. It is necessary for an interpreter to understand current and past theories of interpretation, administrative and resource management history, as well as

present challenges and issues facing the resource. Awareness of past attitudes toward the resource and current conditions are also necessary in the development of knowledge of the resource. The final step in developing this knowledge according the IDP program is in the articulation of the personal meaning of the resource to each individual interpreter (Lacome, 2003, p. 3).

Knowledge of the audience acknowledges the diversity and heterogeneity of interpretive audiences. To effectively develop this portion of the interpretive equation, visitation and demographic information needs to be gathered. Culture, ethnicity, learning styles, and group identity also need to be recognized. Learning the motivation, expectations, and interests of visitors help to make connections to the resource more effectively facilitated as well. Identifying existing meanings, attitudes, and interpretations visitors already possess also aids an interpreter in creating an interpretive opportunity (Lacome, 2003, p. 5).

Appropriate technique involves the method(s) of applying the knowledge of the resource and the audience to the development and implementation of an interpretive program or product. The technique involves the discretion with which an interpreter chooses a medium in which to

engage and involve the audience in an interpretive topic. It includes the skills used to effectively present that medium and the style, attitude, and enthusiasm of the individual interpreter. The organization of the information presented in the program also is important in applying interpretive technique in an appropriate fashion (Lacome, 2003, p. 8).

Interpretive opportunity is the result of appropriately applied knowledge of the resource, knowledge of the audience, and interpretive technique. This leads to a meaningful connection between the audience and the resource (Lacome, 2003, p. 10).

The IDP program acknowledges that "we will never know for sure if an interpretive product will be effective" but considers the interpretive equation to be a calculated risk rather than "a shot in the dark" (Lacome, 2003, p. 12).

In Summary

It is essential to grasp the basics of the management plans and comprehensive interpretive planning process that guides contemporary interpretation in the National Park Service. By understanding this framework, interpreters have a more comprehensive idea of their field and the

bigger picture objectives behind their individual programs and visitor contacts. This understanding makes it easier to select applicable information, facts, and analogies to include in an interpretive product and/or program.

Also, the development of an interpretive product and the achievement of an interpretive opportunity require correct application of the interpretive equation. Many publications have been devoted to describing various techniques of interpretation and methods of acquiring knowledge of the audience. Even if an interpreter attains those techniques and that knowledge however, the resulting interpretive opportunity will not reach fruition if correct facts and information regarding the resource are not applied in the interpretive equation. Correct and accurate information are essential to quality interpretation.

CHAPTER FOUR

INFORMATION IN NATIONAL PARK SERVICE INTERPRETATION: KNOWLEDGE OF THE RESOURCE

Becky Lacome asserts that "knowledge is the foundation of everything we do as interpreters" (2003, p. 2). Knowledge is defined in Webster's dictionary as, "range or information or understanding" (Guralnik, 1977, p. 336). The core of interpretation then is information. Information about the interpretive audience, information about techniques in interpretation, and knowledge of the resource itself are integral in developing an interpretive product.

Knowledge of the resource begins with gathering a comprehensive collection of facts and information relevant to the resource. It is necessary for an interpreter to understand current and past theories of interpretation, administrative and resource management history, as well as present challenges and issues facing the resource. Awareness of past attitudes toward the resource and current conditions are also necessary in the development of knowledge of the resource. The final step in developing this knowledge according the IDP program is in the

articulation of the personal meaning of the resource to each individual interpreter (Lacome, 2003, p. 3).

Knowledge of the visitor and interpretive technique is important as well but those things are inconsequential if accurate information is not presented. To present accurate messages, it is necessary to access accurate and relevant sources be they books, research articles, or other sources (Lacome, 2003, p. 3).

Previous chapters cited examples of the power of interpretation as a tool in influencing and changing people's behaviors and attitudes. This power alone illustrates the interpreter's responsibility to provide accurate information. The previous chapter addressed the bigger picture of interpretation by describing contemporary interpretive planning and accepted methods for developing interpretive products (specifically the interpretive equation). This chapter examines the acquisition of knowledge of the resource, specifically by examining interpretation in terms of information. The quality, quantity, and accessibility of information can aid an interpreter in connecting visitors to the resource. Also, research in interpretation is essential in developing a quality and comprehensive knowledge of the resource. This leads to the development of a quality

interpretive product. Ultimately this chapter stresses the importance of using accurate and credible information in developing and sharing interpretive messages while acknowledging that what is accurate and credible is dynamic and sometimes changes with the times.

Ecology and Interpretation: Quality of Information

Interpretation and NPS management have not always reflected the interrelationships of organisms and abiotic features within the resource. The emergence of the field of ecology deeply affected interpretation, especially within parks set aside for their natural features (as opposed to parks established for historical or cultural features) (Mackintosh, 1986, The Importance of Historical Interpretation, para. 2). Today people realize that no park is an island and no features or organisms within are independent of the others. Scientific information is always changing as humans learn more. In the early years of the NPS, scientists and park management were unaware of the effect certain aspects of the resource had on other aspects. Consequences of this sometimes meant managing the experience of a visitor by manipulating the flora and fauna in accordance to visitors' expectations. Richard Sellars, in his book Preserving Nature in the National

Parks, described early management efforts in the National Parks, "Indeed, in addition to its manipulation of flora and fauna, the Service's natural history concerns focused on ensuring public enjoyment, not preserving biological integrity" (1997, p. 86). Sellars added,

> Certainly through its determined efforts to preserve the scenic facade of nature, the Park Service under Mather focused on aesthetic conservation. But as practiced during the early decades of the Park Service, the nurturing of forest and certain animal species that contributed most to public enjoyment had a strongly utilitarian cast. It was to a degree, even "commodity" oriented, as with fish management and the ranching and farming types of operations intended to ensure an abundance of the favored large mammals. Just as it was virtually impossible to separate the basic ideas of National Parks from tourism development and economics (a connection dating back to the Northern Pacific Railroad's support of the 1872 Yellowstone legislation), so too was it difficult to separate the treatment of specific park resources (bears, fish, and forests for

> example) from the promotion of public enjoyment of the parks, which fostered tourism and economic benefits...Through the promotion of tourism in the national parks, scenery itself became a kind of commodity. (1997, p. 88-89)

Michael Soukap, in an article for the George Wright Forum also wrote that,

> Since fires burned the forest, predators ate the elk and deer that visitors came to see, and pelicans ate the trout people sought to catch, it seemed clear that park stewardship called for fire suppression and predator control. So to protect the parks, park stewards killed wolves and coyotes, crushed white pelican eggs, and did their best to put out forest fires. (1999, p. 36)

Interpretive programs reflected this philosophy in park management. In Sequoia and Kings Canyon National Parks, up until 1940 an amphitheater surrounded a garbage dump where visitors watched bears feed on the remnants of human food (Dilsaver & Tweed, 1990, p. 179). The alteration of natural behavior in ecosystems was incorporated into interpretive programs.

As time went on and scientists and researchers learned more about natural systems, interpretation and information passed on to the public mirrored this changing perception of land management. As the Comprehensive Interpretive Planning guide articulated, "Scientists ask questions about processes, relationships, causes, and effects. Through these examinations and the acquisition of new knowledge every generation has refined research methodology and subsequently changed the interpretation of our natural and cultural resources" (NPS, 2000, p. 31). Tangible examples of this include fire and wildlife management. Up until the 1960s, fire symbolized destruction and had been suppressed in protected areas. Soon scientists began to observe the negative impact of fire suppression and acknowledged the important role of fire in ecosystems. Most people still remember Smokey Bear and the information campaign for fire suppression. Because of the previously inaccurate information given to the public, the NPS and other agencies like the Forest Service suffered under public scrutiny once they changed their policy of fire management. People questioned the agencies credibility and validity of actions.

Wildlife management changed as well as scientists and researchers learned more about interrelationships and the

science of ecology. Management policies became based on longer term, on-going studies guided more by scientific methodology than superficial, aesthetic visitor pleasing management (Dennis, 1999, p. 7). According to Susan Consolo, a longtime NPS employee, park management is now directed to manage human activities rather than manipulate the resource. She gave examples of ongoing studies at Yellowstone National Park. One was conducted to determine how far winter recreation trails should keep away from winter elk range. Another study's purpose was to monitor wolf and human interaction to ensure wolf well being (1990, p. 2).

The role of resource management in the National Park Service is still much debated however. Michael Soukap wrote that though the NPS, "is exemplary in making park resources available to the visitor, and has some successes in restoring disturbed park environments, it has a long way to go in integrating science into park management and interpretation" (1999, p. 22).

Education versus Entertainment in Interpretation: Quantity of Information

In addition to the quality of information, the quantity of information given in interpretive talks can

vary as well. Effective interpretation is dependent upon a balance of education and entertainment (Ham, 1992, p. 3). The creation of this balance has always been a challenge in the NPS. The amount of information an interpretive program contains, compared to the way and style in which it is communicated, has been the subject of much controversy and interpretive planning in the NPS. According to Mack and Thompson,

> Some see interpretation as an art and it must be left free to perfect its artistic potential. Some writers have suggested that interpreters must sometimes be reminded gently of their responsibility to the management of the park. Some see the role of interpretation as simply educating the curious visitor about human or natural history. (1995, p. 10)

Since the establishment of the NPS Education Division in 1917, interpreters have been urged to communicate concepts rather than pure data and do so in a manner "enticing" to the visitor (Mackintosh, 1986, Interpretation Institutionalized, para. 4).

At the same time, interpretation in the NPS has been criticized for being more in the business of entertainment than serious education. In 1976, William Penn Mott, Jr., a

distinguished park administrator and later director of the NPS wrote that "...All too often interpretive programs have as their primary objective entertaining people. Entertainment should not be the end product, but should be a means toward the end product, which should be education" (in Mackintosh, 1986, Interpretation in Crisis, para. 22).

The Interpretive Development Program (IDP) was established in 1996 by the NPS to create standards for the profession of interpretation. The IDP program has developed a series of competencies to help individual interpreters balance entertainment with program content. In the first module, it states that entertainment and fun are part of the interpretive process and that interpretations primary goal is to provide access to meanings, not pure information (NPS, 2003b, p. 2). It also states that in addition to entertainment and fun, the interpreter must provide accurate and balanced information. In one of the later modules, the role of research in interpretation is stressed in the ability to provide an effective interpretive program (NPS, 2003c, p. 4).

Interpretation and Resource Management: Information and Accessibility

As well as quality and quantity, the accessibility of current and credible information for interpretation has also varied within NPS interpretive history. Many people believed and still believe there to be discrepancy between interpretation and resource management in the terms of the amount of and way in which scientific knowledge of the resource is passed on. In 1925, a biologist named Charles Adams conducted an analysis of the National Parks and concluded that "naturalists in the parks were not devoted to technical research, but in the main to elementary educational work with the park visitors" (Sellars, 1997, p. 86). On the other hand, according to Barry Mackintosh who wrote a book on NPS interpretation, "some of the early naturalist appointees were academically trained scientists who could not adapt to field work with park visitors" (1986, Interpretation Institutionalized, para. 6). In 1988, the Chief Scientist of the Park Service's southwest region suggested, in a key note speech to the George Wright society, that "it takes an average of 8 years for research completed in a park to get into its interpretive programs" (in Consolo, 1990, p. 4).

Suggestions for bridging this natural resource management and interpretation gap vary. Some parks employ research interpreters whose primary purpose is to liaise with natural resource specialists and translate scientific knowledge to other interpreters as well as the public. One obvious pitfall of this includes budgetary constraints. Not all parks have the budget to create this kind of position. Consolo (1990) recommended building a shared sense of mission between the interpretive and resource divisions. She also suggested that interpreters actively use and reference the Resource Management Plan that exists for the park. That "document should be a critical reference for park staff placing [scientific] research in a management context. It will also help to move [management] from a 'species orientation' to a 'ecosystem' orientation" (p. 7).

The Importance of Research in Interpretation

The role of research is essential for interpreters to accurately interpret the resource to the public. If an interpreter does not conduct accurate, credible, and diverse research than the integrity of their interpretation is compromised (NPS, 2003c, p. 1). The importance of research was acknowledged early on in NPS

history. In 1933, the director of the NPS Horace Albright wrote,

> Research is necessary not only to the preparation of interesting material to service as a basis of the naturalist and historical service, but it also is fundamental to the actual protection of the natural features of the parks...Aside from the educational standpoint—the incalculable values of the national parks and national monuments as research laboratories has been recognized by a number of schools, including important universities and many field classes are held therein, particularly in ecology, geology, and archeology...There is no doubt but that this use of the parks as field schools will increase in the future, side by side with the growth in tourist travel. Thus the parks have an important destiny in the futures of our natural life, from the standpoints of educational, spiritual and recreational values. (in Pitcaithley, 2002, para. 10)

In Module 340 of the IDP program it is stated that, "Advanced research skills allow interpreters to gather information that potentially establishes relevance and

creates opportunities for audiences to make their own intellectual and emotional connections with the meaning and significance inherent in the resource" (NPS, 2003d, p. 1). These research skills include keeping current on the resource as well as becoming knowledgeable about the evolution of theories, interpretations, and scientific methodology. The more knowledge an interpreter possesses of their resource(s), the better chance they have to connect visitors to that resource(s). With relevant, balanced and accurate information, a greater context for the park's stories is portrayed. As it says in Planning for Interpretation and Visitor Experiences, a guide published by the National Park Service, sound research methodology can "help [interpreters]: present accurate messages, present balanced and complete messages, and present single objects [e.g., organism, place, person, event] within larger contexts [e.g., ecosystem, landscape, community, period]" (Division of Interpretive Planning, 1998, p. 31-31).

Even Freeman Tilden, considered by many to be the father of interpretation, acknowledged the importance of research. One of Tilden's six principles for interpretation is, "Interpretation should aim to present a whole rather than a part" (1977, p. 9). The likelihood of

an interpreter presenting a comprehensive story of a resource increases with the more knowledge he or she possesses. Tilden gave an example of the benefits of research in describing a visitor to Crater Lake.

> Research is responsible for the satisfactory and stimulating experience of the visitor to Crater Lake, where the interpretation takes the visitor beyond the point of his aesthetic joy toward a realization of the natural forces that have joined to produce the beauty around him. (1977, p. 6)

In Summary

An interpreter has a professional responsibility to visitors to provide them with accurate information that stems from their knowledge of the resource. As observed throughout history however, information and resulting accuracy and credibility is dynamic and fluctuates with the times. As society learns more, knowledge of the resource is bound to continue to change. An interpreter is responsible for keeping abreast of this changing knowledge as well as informing visitors and audiences of the dynamic nature of information.

The awareness of the role and dynamism of information throughout history can aid in the selection of sources. It can also lead to discretion in terms of which information is presented. It also can help more effectively direct efforts at resource research as well as inspire interpreters to seek out more creative venues of information gathering. The concurrent information era allows access to a variety of information from a variety of sources. This is exciting but it also requires caution in source selection. Interpreter's have the responsibility to question sources and credibility of acquired information. In a compilation of essays on interpretation, interpretive naturalist, Kenneth Nyberg questioned the integrity of interpretation suggesting that interpreters take themselves too seriously. His belief is that information and perspective shared with visitors is often incomplete or inaccurate. He suggested that interpreters needed to remedy the inaccuracy and incompleteness by gaining a more comprehensive understanding of interpretation as a profession. "I believe it is useful to question the very basis of what we do--to go to the roots, to be radical. That is true of science, of life, and interpretive programming, as well. Quite often the journey

itself is more important than the ultimate destination" (in Field & Machlis, 1984, p. 155).

CHAPTER FIVE

METHODOLOGY

Background

The goal of this work has remained constant: to improve the accuracy and quality of interpretation in Sequoia and Kings Canyon National Park, with implications for the National Park Service in general. The means to achieve this has also remained constant: to facilitate a method of making the acquisition of the knowledge of the resource (the park itself) easier for interpreters.

In the early stages of this work, consideration was given to comprising an annotated bibliography of the bound sources that exist for the interpretation of Sequoia and Kings Canyon National Parks. Once the accumulation of those sources had begun and a few annotations had been written, the point of the whole process seemed too focused. How can the perspective of one person be a very accurate evaluation of a source? In addition to the subjectivity, an annotated bibliography is useful only until the date of its publication. New potential interpretive sources would not be reviewed unless a person was responsible for updating the annotations on a regular basis. Thus the idea of a set of guidelines essentially

standardizing the method of source evaluation was conceived. The guidelines were to be based on the philosophy of 'teaching the fisherperson to fish rather than giving them the fish.'

To create an effective and useful set of guidelines to be used in evaluating interpretive material, it was essential to understand the interpretive profession in the National Park Service. Working as a Park Ranger of Interpretation for three seasons (about 11 months in entirety) in Sequoia and Kings Canyon provided me with an understanding of the every day responsibilities of an interpreter and the park specific methods of developing interpretive programs. To round out this understanding, research regarding the history of interpretation and the relationship between interpretation and environmental education needed to be conducted. An examination of the relationship between current park management documents and interpretation needed to be carried out as well.

Process of Development

Researching Interpretation in the National Park Service

Though the philosophy of interpretation has remained constant, the methodology and implementation of interpretation has fluctuated widely throughout its

history in the NPS (Sharpe, 1982, p. 5-6). Accessing various on-line resources, as well as bound sources and journal articles, was overwhelming. Several sources defined interpretation and specifically covered various interpretive techniques. Many also professed the importance of acquiring knowledge of the audience. One of the most useful sources in understanding modern interpretation was the Interpretive Development Program (IDP) of the NPS and its various modules (NPS, 2003a, b, c, d).

Another extremely useful source by David Larsen (2003) of the NPS, Meaningful Interpretation: How to Connect Heart and Minds to Places, Objects, and Other Resources, gave insight into the ideology and methods behind contemporary interpretation in the NPS (2003). For example, tangibles, intangibles, themes, goals, and objectives are all concepts discussed in his text.

However, it proved more difficult to find resources describing and detailing the history of interpretation. One such resource devoted to the history of interpretation was authored in 1986 by Barry MacKintosh. It included much interpretive history and past interpretive perspectives. Much of the other information was found in bits and pieces from on-line essays and other texts. Robin Winks authored

an introduction to the inception of the National Park Service (1997) linked to the NPS website that provided a backdrop to the ideology of preservation and the forthcoming interpretive program. Information specific to SEKI interpretation came from a resource history coauthored by the Chief Park Naturalist at SEKI (Dilsaver & Tweed, 1990).

Researching the Relationship between Interpretation and Environmental Education

The relationship between interpretation and environmental education can be confusing. They are simultaneously very similar and very different. In the comparison and contrast of the two fields, a few sources were extremely informative. The most valuable information found on the relationship between interpretation and environmental education existed in an article authored by Braus and Disinger (1996) in the Collected Papers of the 1996 National Environmental Education Summit (1996). Throughout this article they chronicled the educational roots of environmental education. They also outlined the various other fields of education which have contributed to the contemporary field of environmental education. One of those included conservation education which Braus and Disinger considered a twin and arguable the basis of

interpretation (1996, p. 10). Another valuable source existed in Grant Sharpe's text book, Interpreting the Environment, which provided an overview of interpretation (1982). Susan Jacobson's book, Communication Skills for Conservation Professionals, also articulated a detailed description of both interpretation and conservation education (1999).

Accumulating Information on National Park Management in Order to Illustrate the Role of Interpretation

The management documents associated with any federal agency are plentiful. Thus, it was very time consuming to do web searches and then weed through relevant planning documents. In the actual setting of the National Park, hard copies of those documents existed in droves. Invaluable were volumes one and two of the draft General Management Plan for Sequoia and Kings Canyon National Parks (SEKI, 2004 a & b). These two volumes were excellent sources in describing the relationship of all park planning documents. Every 15 to 20 years, the General Management Plan is revised. These two volumes were also indispensable in providing accurate and contemporary cultural and natural history and outlining the current mission statement and goals of SEKI. There is a comprehensive bibliography at the end of the second volume

that includes the research reports and journal articles that park research managers refer to in managing SEKI's natural resources. These draft volumes are currently being approved by the federal government for use throughout the next 15 to 20 years.

Another invaluable source outlining contemporary interpretive planning existed in Comprehensive Interpretive Planning: Interpretation and Education (NPS, 2000). This document described how interpretive planning in the NPS is conducted at a federal level. It described the minimum level of planning that needs to be present at each individual park.

Examining the Role of Information in the History of Interpretation in the National Park Service

Researching the role of information throughout the history of the National Park Service illuminated the dynamism of information presented to the public throughout time. Changed perspectives on past land management practices such as predation control and fire suppression illustrate evolution of information. Also, cited beliefs of National Parks, as commodities to extrapolate tourist dollars, accentuated the diversity of land management perspectives (O' Brien, 1999, p. 22). The history of tenuous information in the NPS is a reminder to

interpreters that even contemporary information needs to be questioned.

Richard Sellars, a previous NPS employee and historian, provided many examples of this in his book, Preserving Nature in the National Parks (1997). This book proved invaluable in the research of the history of biological conservation in the National Parks and detailed many past land management decisions based on personal beliefs and not science. Sellar's book stressed the need for consistency of information and methodology across the NPS.

Many other journal articles written by NPS employees such as Susan Consolo (1990) and Michael Soukap (1999), spoke of the need for park managers, researchers, and interpreters to streamline information given to the public. Consolo's article specifically focused on the translation of scientific information in to park management (hence interpretation), at the operational level (1990). Soukap noted that partially due to inconsistencies between management, research, and interpretive methodologies, "we lack a systematic approach to accumulating, using, and translating an understanding of the resources we manage" (1999, p. 22). The results of this research implied and supported the need for the

development of a systematic approach to evaluation of sources used in interpretation. A systematic approach to source evaluation would also help to remedy an identifiable gap between contemporary research and information being passed along to the public (Consolo, 1990, p. 8).

Synthesizing and Organizing the Acquired Information

The organization, synthesis, and differentiation of the enormous volume of information in this work proved difficult. Much of the information unearthed throughout the research proved valid not only for understanding interpretation, but conducting it. Much had to be left out, but key concepts and information important to the development of an interpretive professional was included. The comprehensive understanding of a discipline leads to more effective work within that discipline. This text clarifies interpretation for interpreters.

Actual Development of Content Guidelines for Interpretive Excellence

After the previous research further justified the development of a systematic method of evaluating interpretive sources, the formulation of the actual guidelines began. The resulting, Content Guidelines for Interpretive Excellence, is included in the appendix of

this work. The guidelines comprise of a series of attributes that quality interpretive sources should possess. These attributes are background, integrity, scope, usability, balance, and relevance. Each attribute is described by a number of characteristics. The characteristics are further defined by evaluators. The evaluators appear in the form of questions and aid in determining the presence of the characteristics. For example, attribute number two is integrity. Integrity consists of three characteristics; credibility, verifiability, and objectivity. To discover if a potential interpretive source possesses the characteristic of credibility, one evaluator questions if the source is original or authentic. Another evaluator asks if the source is primary or secondary. The evaluators are worded as questions rather than statements to allow for flexibility in source selection. There is no right answer, just a combination of answers that distinguish the credibility (or lack thereof) of the source. Not all sources will possess all characteristics or attributes. The actual guidelines, included as the appendix, provide much more detail and instruction.

The Content Guidelines for Interpretive Excellence also includes a rubric to enable a standardized means of

assessment to rate the potential source material. Numerical values are assigned to the suitability of a source possessing the characteristics of a key attribute. This ensures consistent evaluation of varying sources and the ability for those sources to be compared and contrasted. Once evaluated, the interpreter can choose the source with a higher rating.

Various sources were referenced for the development of the Content Guidelines for Interpretive Excellence. Formal education content standards, text book review processes, and other methods of evaluation were accessed. The most valuable sources were the North American Association for Environmental Education's (NAAEE) Environmental Education Materials: Guidelines for Excellence (1996), the Interpretive Development Program of the NPS (NPS, 2003a, b, c, d), and the publication review form developed and used by Sequoia Natural History Association (SNHA, 2004).

The format of the Content Guidelines for Interpretive Excellence is loosely based on that of the NAAEE guidelines. This is due to the fact that the NAAEE is a widely recognized environmental education agency and many educators contributed to the guidelines development. Thus the NAAEE guidelines are acknowledged as an effective and

accurate means of evaluation. The NAAEE guidelines were developed specifically for developing and selecting environmental education (EE) materials. They "aim to help developers of activity guides, lesson plans, and other instructional materials produce high quality products and to provide educators with a tool to evaluate the wide array of available environmental education materials" (NAAEE, 1996, p. 1). They include six characteristics that are accompanied by guidelines that the environmental education materials need to possess. The Interpretive Development Program (IDP) proved valuable in that it includes modules that describe the importance of developing knowledge of the resource. It also includes modules that are specific to interpretive program research. In Module 103: Interpretive Program Research, elements of good research material are listed as, "objectivity, balance, credibility, verifiability, relevance to themes, and support of compelling story" (NPS, 2003c, p. 2). These elements were helpful in that they defined the quality of an interpretive source from the perspective of the NPS. They were not all used as attributes in the Content Guidelines for Interpretive Excellence due to possible confusion ensuing from similarities in definitions. For example, the elements of

credibility and verifiability share many similar characteristics. Relevance to themes and support of compelling story are very similar in nature as well.

Sequoia Natural History Association (SNHA) is a non-profit organization affiliated with Sequoia and Kings Canyon National Parks. SNHA selects the publications to sell in the visitor centers of SEKI. There is an SNHA review process described in the Content Guidelines for Interpretive Excellence through which publications and other educational items (posters, children's toys, postcards, CDs/DVDs) have to pass before they are put out for sale (SNHA, 2004). SNHA and NPS employees use a specific review form (SNHA, 2004) and evaluate the items according to specific criteria (the criteria are listed in the appendix). The criteria on the review form were invaluable in the development of the Content Guidelines for Interpretive Excellence (SNHA, 2004).

In Summary

This work has been dynamic in that it has changed with the accumulation of information. The need for a consistent method of source evaluation was demonstrated in the initial stage of this work. The resulting Content

Guidelines for Interpretive Excellence is found in the appendix of this work.

CHAPTER SIX

CONCLUSIONS AND RECOMMENDATIONS

> I shall interpret the rocks, learn the language of flood, storm and avalanche. I'll acquaint myself with the glaciers and wild gardens, and get as near the heart of the world as I can. (John Muir in MacKintosh, 1986, p. 1)

Having written this prose in 1871, John Muir is credited with lending the word "interpret" to the National Park Service. The NPS now uses this word to describe the process of connecting visitors to park resources.

In 2004, there were 277,000,000 people who visited the 388 units of land managed by the National Park Service (NPS, 2004, para. 7). This number is only 17,000 people less than the entire population of the United States which in the middle of 2004 was 294,000,000 (Population Reference Bureau, 2005, para. 5).

People are visiting the National Parks for many different reasons. Whatever their reason, an Interpretive Park Ranger has the potential to expose the visitor to the many meanings of the park. To successfully facilitate the discovery and connection to these meanings, an

Interpretive Park Ranger must communicate consistent and accurate information.

The purpose of this work was to demonstrate the need for a consistent method of source evaluation in the NPS and then develop that method. This would ensure the communication of consistent and accurate information. The resulting Content Guidelines for Interpretive Excellence is designed to improve the quality of information given to the public in Sequoia and Kings Canyon National Park, with implications for all National Parks.

These guidelines were developed to be a specific method of making the acquisition of the knowledge of the resource (the park itself) easier for interpreters. These guidelines essentially standardize the method of source measurement or evaluation. They exist to aid interpretive professionals in the selection, evaluation, and effective use of quality sources (research material) in interpretive programs and products. They are intended to help diminish biases and inaccuracy in interpretive programs, aid interpreters in gaining the most from their program development time, and reduce misleading or false perspective given to the public. Besides being useful to individual interpreters, these guidelines are of use to

park management in selection of sources to include in libraries and other interpretive trainings.

Recommendations

According to Module 103 in the IDP program, locating, evaluating, and selecting sources are the basic steps of research methodology (NPS, 2003c, p. 1). This work has accomplished the second step in research methodology: evaluating. It has accomplished the creation of a consistent method to evaluate sources for use in interpretive programs and presentations.

Location of sources is the first step of research methodology. This would be the action to take for other NPS parks utilizing these guidelines. SEKI has already accomplished much source location. More could be done. Various bibliographies of multiple subjects useful in the interpretation of SEKI exist scattered throughout park documents, books, websites, and other miscellaneous venues. The compilation of these various bibliographies, their annotations, and evaluation by these guidelines will help to ensure increased accuracy and efficiency in interpretation. In slower visitation seasons, park employees can use the guidelines to rate these sources. This list can be made available to seasonal and new

interpreters. Also, these guidelines could be posted on the web for other organizations to use. If they were converted to an electronic database then sources rated would be much easier to access as well as allowing for new sources to be rated.

Another way to improve interpretation would be to evaluate the comprehensive bibliography to identify gaps in source availability. For example, the general management plan of Sequoia National Park is currently under revision for previously identified reasons. How many of the existing sources for interpretation address comprehensive river management or the management of cultural resources? How many outline the history of special use permits or examine the changing context of SEKI in a regional ecosystem?

The gap between resource management and interpretation could also be amended by further evaluation of existing sources. For example, specific to SEKI, the Sierra Nevada Ecosystem Project (a collaborative effort between several agencies and organizations to evaluate the health of the environment) was completed in 1996. This Project as well as decades of research in SEKI has shown five important stressors to park ecosystems: the loss of pre-Euro-American fire regimes, introduced species, air

pollution, habitat fragmentation, and rapid anthropogenic climatic change (SEKI, 2004b, p. 3). Sources could be grouped by those most relevant to those five stressors. After being comprehensively evaluated, the most pertinent sources could be used to provide contemporary information on those current issues in the park. If people understand the threats, they might change their behavior and actions to positively affect park resources.

Sources could also be grouped by relevance to the Long Range Interpretive Themes (LRIT) of the parks. Once evaluated, a bibliography of the highest quality sources could be compiled and provided to interpreters to use in the development of their programs. This would ensure the presence of the themes in interpretive presentations.

APPENDIX

CONTENT GUIDELINES FOR INTERPRETIVE EXCELLENCE

Table of Contents

Content Guidelines for Interpretive Excellence is a set of guidelines that has been developed to aid interpretive professionals in the selection, evaluation and effective use of quality sources (research material) in interpretive programs and products. These guidelines are intended to: 1.) help diminish biasness and inaccuracy in interpretative programs; 2.) aid interpreters in gaining the most from their program development time; and 3.) reduce misleading or false perspectives given to the public (usually from the availability of sources that contradict one another).

Content Guidelines for Interpretive Excellence:

A consistent method to evaluate sources used in developing interpretive programs

Types of Potential Interpretive Sources:

1.) **Bound Sources**
Field Guides, Natural/Cultural/Resource Histories, Biographies/Autobiographies, Textbooks, Workbooks, Activity Guides, Planning / Management Documents, etc.

2.) **Other**
Pamphlets, Brochures, Planning/Management Documents, Maps, Newspapers, Periodicals, Journals, etc.

***These Guidelines are more conducive to bound sources but they can be adapted for "other" sources.**

In past and present interpretive publications, much has been written about acquiring knowledge of the audience and applying specific interpretive techniques. Much less has been written about the role of knowing the resource and conducting accurate and effective research while using quality sources of information. In attempt to aid interpreters in efficiently evaluating and using sources, Content Guidelines for Interpretive Excellence has been developed. The guidelines were developed using Sequoia and Kings Canyon (SEKI) as example parks. Thus some of the attributes and characteristics included in the guidelines are specific to SEKI. They can however be adapted for use by other National Parks.

Many sources won't meet all of the guidelines but can still be useful for developing an interpretive program or presentation.

These guidelines were formulated with interpretive excellence in mind. They are original guidelines for interpretation though acknowledgement must

be credited to the Environmental Education Materials: Guidelines for Excellence that was developed by the North American Association for Environmental Education (2004). Also, the Interpretive Development Program (IDP) developed by the National Park Service, needs to be mentioned. Two of the IDP curriculum modules were integral in the development of these guidelines. Module 103: Interpretive Program Research (2003c) and Module 340: Advanced Knowledge of the Resource and Resource Liaison (2003d) both offered information and ideology that many of these guidelines incorporate.

How to Use the Guidelines

Content Guidelines for Interpretive Excellence outline six key attributes that sources used in interpretive program development should possess to ensure high quality, accurate interpretation. These attributes are illustrated by specific characteristics. These characteristics are listed under each attribute. To aid in the identification of possessed characteristics, "Things to Notice" lists several questions evaluating the source. These ***evaluators*** are worded as questions rather than statements in order to acknowledge the dynamism of sources. The answer to each ***evaluator*** will vary per source. There is no right answer. The ***evaluators*** are overall ways of gauging whether the sources being examined possess the needed characteristics. If a source does seem to possess the majority of the characteristics and in turn the attribute, then that source is one step (or attribute) closer to meeting all of the guidelines (having all six attributes). This ensures its appropriateness and effectiveness in interpretive program and product preparation.

These guidelines exist to aid interpreters in selecting, evaluating, and using high quality sources in interpretation. They provide a consistent standard by which to measure various sources. They also allow for flexibility and diversity in source selection while ensuring consistency and quality of obtained information. They are intended to diminish biasness, inaccuracy, and contradiction in interpretive presentations.

Sample Format for the Guidelines

#1: Key Attribute

1.1) Characteristic

Things to notice

- *Evaluator*
- *Evaluator*

1.2) Characteristic

Things to notice

- *Evaluator*
- *Evaluator*

The guidelines are criteria by which to judge various sources. It is not reasonable to expect that all sources will meet all of the guidelines. For example, a source might not be relevant to the mission of the NPS. This shortcoming does not necessarily mean the source should not be used. These guidelines can point out weaknesses in sources an interpreter might not notice otherwise. The interpreter can compensate for the weakness and still utilize the source. Also, as all sources vary so will the time it takes to evaluate a source by these guidelines.

The **Content Guidelines for Interpretive Excellence** is by no means all inclusive. Additional attributes might be relevant additions to the guidelines. The formulation of the attributes was specifically developed with interpretation in SEKI and the National Park Service in mind. The guidelines are but a means to evaluate and incorporate higher quality sources in a consistent manner. They provide a foundation on which to build other systems of evaluation that function for different people in different situations.

Quick Tips

1.) Listed under each attribute and next to most characteristics is the definition for that term that these guidelines ascribe to. This is to minimize confusion due to multiple meanings some words possess (see example).

2.) A brief description of the guidelines exists in table form on the following page (p. 82).

3.) A rubric is included in these guidelines (p. 103) . This provides a quick yet detailed overview of what constitutes a quality source. It also includes an evaluation form. This numerical rating scale allows sources to be compared and contrasted in a consistent and measurable manner.

Example

#1: Key Attribute: **Background**
(settings, condition)

1.1) Orientation (style, type)

Things to notice

- *Evaluator*
- *Evaluator*

Content guidelines for Interpretive Excellence Summary

#1 Background: The identification of the setting of the publication is essential when evaluating a potential interpretive source.

1.1 Orientation (type of publication)
1.2 Date
1.3 Author's Background
1.4 Endorsed or published by NPS or affiliated organization
1.5 Length (page numbers)

#2 Integrity: A source used in interpretation needs to be sincere and complete; possessing integrity.

2.1 Credibility
2.2 Verifiability
2.3 Objectivity

#3 Scope: Though the scope will vary per source, the evaluation of its capacity and extent will determine its use interpretively.

3.1 Comprehensiveness
3.2 Technicality
3.3 Foundation (Ecological, Scientific, historical, Cultural)

#4 Usability: The easier to access information, the better the appearance, and the more logically ordered a source is, the more it is useful interpretively.

4.1 Accessibility
4.2 Presentation
4.3 Organization

#5 Balance: The more fair and equal perspectives portrayed in a source, the higher its value in interpretive development.

5.1 Multiple viewpoints and theories
5.2 Acknowledgement of Diversity
5.3 Openness to inquiry

#6 Relevance: If a source relates to and/or holds some relevance to the site where the actual interpretation occurs, then it is more interpretively useful.

6.1 Mission Statement
6.2 Planning Documents

Key attribute #1: Background
(settings, conditions)

Identifying the style of publication as well as the date it was written is essential in determining whether to use the source in the development of an interpretive product. Determining the background of the author and learning if it is endorsed by the National Park Service or an affiliated organization (in the example of SEKI, the Sequoia Natural History Association) also are important aspects of a potential source. The length of a source can also determine its usefulness or practicality in selection for use in interpretation.

1.1 **Orientation** (style, type)

Potential interpretive materials can be separated into categories dependent upon their style or orientation of subject matter. For example, bound resources can be described as field guides. They also can be resource histories or cultural histories. Biographies and autobiographies, text books, workbooks or activity guides are other kinds of publications. There also are informational brochures, pamphlets, journals, and other periodicals.

Possible Styles of Publications

Field guide
Natural/Resource/Cultural History
Biography/Autobiography
Text book
Work book
Activity Guide
Planning or Management Document
Other

Identifying a publication's orientation can aid an interpreter in everything from the development of a program to accessing the answer to a visitors question to the compatibility of bringing a publication on a walk or to a talk for reference. Also by identifying the orientation an interpreter is able to illuminate the potential bias of the source material.

Things to notice

- What, if any, of the above terms are included in the title of the publication?

- Does the publication contain activities or hands on demonstrations (activity book, work book)?
- Does the publication provide historical information (resource, natural, or cultural history)?
- Is the publication's primary function to aid in identifying or distinguishing between various organisms (field guide)?
- Does the publication project a desired state and ways to attain it for the park and/or organization (planning document)?

1.2 Date

The date of a publication gives insight to how contemporary the enclosed information is. Depending on the orientation of the publication however the date may be more or less relevant. For example, a book written by John Muir in the late 1800s can still be used as a great interpretive source for anything from conducting a living history presentation to accessing relevant quotes to gaining a historical perspective on preservation. The Fauna of the National Parks of the United States, published in 1932, is a good source to compare to what park management knows about plant life now but the information on the fauna itself is out-of-date and inaccurate (Dixon, Thompson, & Wright).

Things to notice

- What is the date of this publication?
- Is this publication the first edition? If not, what are the dates of subsequent revisions and later editions?
- Is this an original (first or earliest of a genre) publication?
- Is the publication still in print and/or able to be purchased?

1.3 Author's Background

The identity of the author can illustrate the interpretive use of a publication. Trustworthiness and bias can be indicated by awareness of the author's background. For example, The Challenge of the Big Trees was coauthored by the Chief Park Naturalist of Sequoia and Kings Canyon National Parks (Dilsaver & Tweed, 1990). His perspective on the resource history is one that is intimate (as he has worked there for a lengthy period) as well as immersed within the NPS. The Sierra Nevada Natural History book is a field guide to the Sierra (Lukas, Storer, & Usinger, 2004). This self described handbook lists three authors, yet the acknowledgements page and references consist of the accumulation of hundreds of different, secondary sources by different authors. Thus it comes from much expertise but doesn't describe the authors' actual experience in the region.

Things to notice

- What professional affiliations, qualifications, or credentials does the author(s) hold?
- Is the author(s) a NPS/organization employee? If so, what is that person(s) job description?
- What is the level of education the author possesses?
- What (if any) other publications have the author written or edited?
- What was the authors(s) purpose behind the publication (profit motive, ideological motive, organizational/professional sponsorship, personal hobby, etc.)?

1.4 Endorsed or published by NPS or other affiliated organization

National Park Service (NPS)

If the publication was published by the Department of the Interior (as a park service publication) and/or the National Park Service it tells an interpreter that at least in one point of its existence, it has adhered to the NPS overall mission and is potential interpretive material. Again the endorsement needs to be taken in

context with all of the other evaluative guidelines. The date and content will play a role in its interpretive validity as well.

Sequoia Natural History Association (SNHA)

SNHA is an organization specific to SEKI. It is non-profit, park affiliated and administers the visitor centers book and gift stores. There is a review process through which any book sold by the Sequoia Natural History Association has to pass. As of 2005, it is essentially three tiered. The process begins when a book or list of books are submitted to SNHA as potential sale items. These books come from a variety of sources. NPS/SNHA employees can suggest possible books. Also, book submissions can come from the public or from various publishers. SNHA employees begin the selection process by weeding out books they feel do not meet general selection criteria. Next publications and other items pass through the SNHA executive director. The director passes on books to the National Park Service for the final review process. A district interpreter reviews the books, passing them on to other NPS employees if she has no time or if the item is in a subject not of her expertise. The book is evaluated on the accuracy of the enclosed information and text as well as the accuracy of the artwork and photos. It also is evaluated on overall quality and other comments on the publication are noted as well. The Superintendent of SEKI (many times represented by Chief Park Naturalist) is the last check in the process. This staff member is the one who ultimately approves or rejects books SNHA can sell.

Items Rejected by SNHA

- No interpretive message.
- Inaccurate or misrepresents park.
- Market currently saturated with similar products/titles
- Does not conform to SNHA/park educational mission
- Not an educational item
- Conflicts with sale of SNHA publications/items
- Non-renewable resource or inappropriate
- Not financially viable or does not fit marketing plan
- Insufficient display space
- Previous experience with similar items not profitable
- Insufficient discount/Minimum order too large
- Conflict with concessionaire permit
- Other

(SNHA, 2004)

BUT...

Items not endorsed by SNHA (or other affiliated organization) or published by the NPS do not mean that those sources are not useful interpretively. SNHA has to turn down some items simply based on lack of space in the bookstores, not because of quality. Also, some sources are too general to include as a sales item. For example, items such as environmental education activity guides and other potentially interpretively useful books aren't endorsed because there are too many, they are too general, and the majority of the public won't buy them.

Things to notice

- Is the publication published by the Department of the Interior or the National Park Service?
- Is the publication sold by SNHA (if it is, it has passed the review process)?

1.5 **Length** (number of pages)

The number of pages a publication has is useful to interpreters for purely practical reasons. If an interpreter is working under a time restraint, a lengthy source might not come in as handy as one written with more brevity. Again the importance of this attribute can be more or less important depending on the detail or quality of the table of contents or index. Another thing to take into consideration is if number of pages is consistent with the orientation of the publication. For example, if the publication is marketed as a comprehensive field guide and consists of few pages, the comprehensiveness might be questionable.

Things to notice

- What is the overall number of pages in this publication?
- What is the proportion of the text to other components of the publication (i.e. illustrations/glossary/introduction/other)?

Key attribute #2: integrity
(completeness, wholeness, soundness, sincerity)

In terms of interpretive validity, the most important characteristic a quality source can possess is integrity. If a source is not credible, verifiable, or objective than an interpreter must question it's use. "The raw material of interpretation is information," as Freeman Tilden wrote (1977, p. 22). Interpreters are accountable to the public for the information they provide. Thus accurate information is essential. It is asserted in Module 103 of the IDP program that, "Knowledge of the resource and accurate, responsible information are fundamental elements of the interpretive equation" (2003c, para. 1).

Integrity is established by evaluating an interpretive source by its credibility (that which is reliable and can be believed). Verifiability (that which is accurate and true by evidence) also contributes to the integrity of a publication. The third measure of the integrity of a source is its objectivity (that which is real, without bias or prejudice).

2.1 **Credibility** (that which is reliable and can be believed)

Ensuring that sources are credible is essential to the development of quality interpretive material. Publishing is not synonymous with quality or accuracy. Reliability and believability are established by examination of the source. Is it the first of its kind? Did the author do their own research or regurgitate information already accumulated and written by others? If the author is writing about rock formation, what is that person's background in geology?

Things to notice

- Is this an original (first or earliest of a genre) or authentic (genuine, not reproduced) publication?
- Does this source contain authentic (genuine, not reproduced) data?
- Is the publication a primary (provides context, documentation, and explanation) or secondary source (reviews or newspaper articles which provide only bits and pieces)?

- Is there a foreword or an introduction by someone other than the author? If so who are they and what are their credentials (a reputable source)?

- Is the author(s) considered an expert in his/her field?

- Has this source been referenced in other publications?

**Even if a source is compiled from secondary sources or if it isn't original or authentic, it can still be useful. The identification of these source characteristics allows a interpreter knowledge of how best to use or incorporate the source in interpretive programs or other interpretive product development.*

2.2 **Verifiability** (to prove to be true by evidence, test accuracy of)

Unless a source's orientation is that of fiction or some other genre in which accuracy is not essential, potential interpretive materials need to be verifiable. If an interpreter is sharing a statistic from an interpretive source, the author(s) of that source should have proven that statistic true by evidence.

Things to notice

- Are there any obvious false, contradictory, or out of date facts or statements within the publication?

- Are there any facts or statements that are contradictory or inconsistent with those in other publications?

- Does this source include citations, footnotes, references, and/or a bibliography? If so, how comprehensive are these they?

- Is factual information clearly referenced? If so, does the factual information come from current and legitimate sources? (what constitutes "legitimate"?)

- Is there an acknowledgements section or a preface indicating the background for the source?

2.3 **Objectivity** (that which is real, without bias or prejudice)

In interpreting the natural world, sources utilized should be objective and unbiased. While gathering pure facts and accurate information for the content of an interpretive product, an objective source is essential.

Sources that are authored from a subjective viewpoint can still be useful in the development of an interpretive product however. For example, things like stories or personal perspective from a subjective source can still be incorporated into interpretive presentations and products.

Things to notice

- Is the content written without bias?
- Where there are differences of opinion or competing scientific explanations, are the range of perspectives presented in a balanced way?
- Are opinions or policies of an agency or organization clearly identified as such?
- If the content is written subjectively, is it easy to identify as such?

Key attribute #3: scope
(range, capacity, extent)

Publications vary in range and depth of content. Some publications are extremely detailed on one topic. Other publications cover several topics in less depth. The evaluation of the scope of a source can aid an interpreter in more effectively developing programs.

The scope of a source can be evaluated in terms of comprehensiveness (the breadth and depth of the publication). It can also be evaluated in terms of technicality (the detail and language used in the publication). The final way in which the scope can be evaluated is in its foundation. Is its nature describable as ecological, scientific, historical, cultural or a mixture?

3.1 **Comprehensiveness** (breadth and depth)

Sources can be categorized in terms of the all inclusiveness of information enclosed. A source can comprehensively cover one subject or multiple subjects. A beginning interpreter might wish to access a less inclusive or comprehensive source initially. An extremely comprehensive source might be the appropriate source for an interpretive product with a more specific subject matter. Detail rather than range of topic might be the answer for one such program. By evaluating the breadth and depth of the publication, an interpreter can best decide how to incorporate a source.

Things to notice

- To what degree of detail does the publication examine and explore its topic(s)?
- How many different topics are listed in the table of contents?
- How in depth does the publication present ecological and cultural perspectives?
- How many different disciplines and/or fields are accessed in the body of the publication?

3.2 **Technicality** (detail, level of language)

The level of the language needs to be taken into account while evaluating sources. Scientific terms, common terms and depth of explanation of topic all influence how a publication is used in interpretation. A highly technical publication on the formation of a mountain range might not be the source to access when looking for a one sentence description to give an interpretive audience. This is especially the case if the interpreter is not well versed in geology. It might however be useful to someone with a geological background who needs more technical information.

Things to notice

- What level of language does the publication use in describing the enclosed topic(s)?
- Could someone with no background in the topic(s) pick up the publication and understand it?
- Does the bibliography of the publication include highly technical research and journal papers?

3.3 **Foundations** (Ecological, Scientific, Historical, Cultural)

***Every publication is authored from varying perspectives. Some of those perspectives come from differing philosophies, methodologies, and assumptions indicative of a particular foundation of thought or professional discipline(s). Most contemporary publications on flora and fauna are written with an ecological perspective. This foundation stresses the interrelatedness of all organisms be they human, invertebrate, or vegetative. A scientific foundation is one in which information and** conclusions included are drawn from systematic, organized methodological research (with objective results). It **can also be ecological in nature. A historical foundation is one which includes gathered evidence that describes and explains the past. It sometimes will use the past to explain or give insight to the present and/or the future. A cultural foundation depicts a human story throughout a publication. Things such as cultural values, attitudes, past and present human uses are included in a publication with a cultural foundation. More often than not publications will have a combination of*

foundations. Sometimes however a foundation or foundations will be dominant. Most field guides for example will have more of a scientific and/or ecological foundation than cultural or historical. A resource history of an area will probably have a combination of all of the foundations.

The identification of the foundation of enclosed assumptions provides insight into the publication in terms of its potential for use. If an interpreter is conducting research for a living history presentation than publications with historical and cultural foundations will probably be more useful. If an interpreter is trying to learn the birds of an area, a publication with a scientific and ecological foundation will be more useful.

Things to notice

- Does the publication acknowledge a diversity of life and interrelatedness of all things (ecology)?
- Does the information in the publication come from systematic and organized methodological research (science)?
- Is the information in the publication sourced from widely tested and consistent results?
- Are past events, theories, or assumptions described or referenced in the publication (history)?
- Is a human story included in the publication (culture)?

Key attribute #4: Usability

(utilization, application, employment)

The practicality of an attribute such as usability can not be underestimated. It is important in the identification and evaluation of a potential interpretive source. The ease with which information is accessed, the appearance of the publication, and the organization of the information enclosed all contribute to its usability. The accessibility and convenience of information or illustrations within a source can make or break its usefulness. If information is hard to find then no matter how eloquent or detailed a source is, it has lost much of its usefulness. The appearance and presentation of a publication also play a role in the evaluation of its usefulness. If the font of the text is difficult to read or if the illustrations are hard to see than the interpretive value of that source diminishes. Also, the interpretive value of the source increases if it is well organized, there is methodology to finding information, and there is logic to the order in which the text is presented.

4.1 **Accessibility** (convenience, user friendliness, ease of access)

The easier it is to access information in a publication, the more useful it will be in developing an interpretive program or product. No matter how accurate and well written, a publication will be a time waster if it is difficult to access that accurate and eloquent information. Comprehensive glossaries, indexes, and table of contents help a publication to be convenient to use.

Things to notice

- How user friendly is the publication?
- How detailed is the table of contents?
- Is there an accurate index?
- Is there a glossary? If so, how comprehensive is it?
- Does the publication include references or sources for further information?

4.2 **Presentation** (appearance, exterior, outward show)

A publication is easier to use if its layout is interesting and appealing to those accessing it. Although the old adage of "you can't judge a book by its cover" is true in many cases, there are exceptions. If the binding of a new publication is falling apart, it might in the long run take more time to maneuver the pages than to access another source. Also, if the text is difficult to read or the illustrations don't seem to fit the information, the source immediately loses interpretive value. The manner or voice in which the publication is written helps determine a sources use as well. If the voice is engaging it will make it easier and faster to read and retain the information in the publication.

Things to notice

- Is the outer appearance of the publication attractive?
- Does the publication appear to be durable?
- Is the text easy to read or follow?
- What is the quality of enclosed photographs or illustrations?
- Is the layout of the pages well organized?
- Is the publication written in an engaging and clear voice?

4.3 **Organization** (orderliness, logic, systematic, methodological)

Orderliness and organization are important attributes of a publication. Evaluation of the organization of enclosed information ensures that a publication is valid as a potential interpretive source. If the enclosed facts are jumbled and difficult to access then another source might be a better selection. If the material is not presented in a logical manner, then again that publication loses validity.

Things to notice

- Is the content organized in a logical, easy to follow manner?
- Is the publication written in an engaging and clear voice?
- Are concepts and information well articulated and appropriate to the publication?
- Is there purpose and direction in the overall structure of the publication?
- Is there adequate background information or introduction to the material presented in the publication?
- Does the publication end with an appropriate conclusion?

Key attribute #5: Balance
(equality, fairness)

The manner in which a publication presents information is important as far as its validity as a resource. The inclusion of multiple viewpoints and a balanced presentation of perspectives add to the integrity of a publication. Also, acknowledgment of various cultural perspectives and an identification of factors limiting the extent of the text signify usefulness. Texts that encourage more inquiry and give additional direction on how to further explore the subject matter have potential for use in interpretation. Of course, subjective and biased texts exist that still are useful for interpretive preparation. The opinion, as recorded in a journal, of an early American settler regarding Native Americans is much different than a text authored by a contemporary anthropologist on the same group of Native Americans. The different voice does not rule out the usefulness of the settler's journal however.

5.1 Multiple viewpoints and theories

The presentation of a range of perspectives and theories is important in a publication. For example, when reading about the uplift of the Sierra it is helpful to understand or at least be aware that multiple theories exist (and have an idea of the extent of research conducted per hypothesis). If a text is not conducive or comprehensive enough to detail a wide range of perspectives (as many are not), it is also important that the text not mock or blatantly pronounce another perspective as wrong or false. Debasing various theories or perspectives is worse than not presenting a variety of theories. Publications which prove to be the most useful oftentimes are those that achieve a balance of perspectives, theories, and information. Note however, there is a difference between scientific and non-scientific publications and those useful to interpretation are many times scientific. Scientific texts, of course, should not include non-scientific perspectives.

Things to notice

- Did proponents of differing viewpoints contribute to or review the source?
- Did the source acknowledge different opinions?
- Did the source clearly outline other opinions or policies?
- Was the source fair to varying perspectives presented?

5.2 Acknowledgement of Diversity

As well as the presentation of a variety of historical and scientific perspectives, it is also essential for a publication to depict different cultures, genders, social groups, ages, etc., with respect and equity. A publication loses validity if it is derogatory to other cultures and ensuing perspectives. Again, not all publications are conducive to the acknowledgement of diversity. A publication written in the early 1900s will probably include lexicon not appropriate to the early 2000s. Understanding this and taking into account its other attributes can still allow one such source to be usable.

Things to notice

- Does the source acknowledge various cultural perspectives?
- Does the source depict people of various races, ethnic groups, genders, and social groups in a fair and respectable way?

5.3 Openness to inquiry

A publication is successful if it inspires the need to learn more about its subject. One such source is extremely useful for interpretive research if it includes direction on how to keep learning about the subject. The inclusion of references and additional resources adds to a publications interpretive validity. Acknowledging the limitations of the enclosed information and text is also useful to an interpreter in the utilization of a source. This allows an interpreter to fill in the gaps with additional information if needed.

Things to notice

- Does the source inspire further exploration of its subject matter?
- Does the source suggest resources for further exploration?
- Does the source acknowledge the limitations of the enclosed information/content?

Key attribute #6: relevance
(application, significance)

Interpretation is defined by the National Association for Interpretation as "a communication process that forges emotional and intellectual connections between the interests of the audience and the inherent meanings in the resource" (2005, para. 1). A publication or source accessed for interpretive program development must then somehow be relevant to that resource. Most organizations have mission statements; overarching visions for what they are all about. An interpreter needs to question the significance or relationship of the source they are accessing to that overall purpose. Other organizations have general management plans citing specific goals for their resource or management of their resource. It is essential that an interpretive source relate to those plans. The following guidelines are specific to Sequoia and Kings Canyon National Parks but they can be adapted for any organization.

6.1 Mission Statements

National Park Service

The mission of the National Park Service stems directly from the Organic Act of 1916, "...to conserve scenery and other park resources and to provide for the enjoyment of such resources by such means as will leave them unimpaired for the enjoyment of future generations" (Winks, 1997, para. 2). A source employed for interpretive research needs to be evaluated in comparison to this mission statement. A source is still potentially usable if it doesn't advocate preservation or conservation but it must be used in context. For example, many publications in the early 1900s encouraged hunting of specific animals to control predation. Today wildlife managers ascribe to the science of ecology where all things, including predators, are seen as an integral aspect of the ecosystem. The early publications are still relevant, but an interpreter needs to use discretion in how that information is presented. They shouldn't include the information in that early text as contemporary fact.

Sequoia and Kings Canyon National Parks

The mission of Sequoia and Kings Canyon National Parks, "is to protect forever the greater Sierran ecosystem-including the sequoia groves and high Sierra regions of the parks-and its natural evolution, and to provide appropriate opportunities to present and future generations to experience and understand park resources and values"(SEKI, 2004a, p. 11). Thus an interpreter is not going to choose a source written in 2004 that advocates logging of Sequoia groves. Chances are the rest of the information in the text will also not support a preservationist ethic.

Things to notice

- Is an ethic of conservation or preservation included in the publication?
- Does the publication support the two mission statements?
- Is the publication specific to SEKI?
- Is the publication specific to the Sierra Nevada?

6.2 Planning Documents

Most organizations have documents directing the management of the resource. Each National Park has its own General Management Plan which identifies the desired condition of the resource and suggests actions to achieve the condition. The desired conditions include provisions for the actual state or health of the resource (called the Resource Management Plan) as well as desired goals for visitors experience in the resource.

Visitor experience goals are to
(1) make available a variety of experiences to visitors, including the ability to access orientation and activity planning;
(2) interact safely with natural and cultural resources;
(3) experience park environments by exploring trails;
(4) learn about resources through a variety of media;
(5) understand the ecosystem;
(6) learn about and appreciate less readily available resources;
(7) be introduced to vulnerabilities of resources to human activities;
(8) be provided opportunities to learn skills needed to enjoy the parks; and
(9) encourage visitors to appreciate the national park system and its mission and to recognize naturalness and wildness as values preserved in parks.
(SEKI, 2004a)

Specific to interpretation, there is a long range interpretive plan (LRIP) encompassed under the General Management Plan (GMP). It defines the overall vision and long term (5-10 years) interpretive goals of the park. Included are long range interpretive themes (LRIT) that park interpretive staff believe are critical to a visitor's understanding of the resource. In Sequoia and Kings Canyon National Parks there are six such themes.

LONG RANGE INTERPRETIVE THEMES (LRIT): SEQUOIA AND KINGS CANYON NATIONAL PARKS

1.) The natural resources of the southern Sierra Nevada have undergone a series of human uses and impacts as values for those resources have evolved.	4.) The Sierra Nevada was created by and continues to be acted upon by a variety of geologic forces.
2.) Giant Sequoias, which grow only on the western slope of the Sierra Nevada, have a fascinating ecology which allows them to become the largest, and some of the oldest, trees in the world.	5.) The Sierra Nevada environment, which plays a critical role in defining the region's climate, geography, and economy, is greatly affected by human activities within the region.
3.) Because of the enormous topographic relief of the southern Sierra Nevada, the range creates a wide range of climates, shaping a diversity of interconnected habitats, each of which is occupied by carefully adapted, interdependent organisms.	6.) Sequoia and Kings Canyon National Parks protect a large wilderness area, where natural forces prevail and which provides significant scientific and social values to the world.

It is imperative that interpretive programs and products incorporate these themes. Thus a source doesn't need to specifically have each of these themes spelled out in them but information taken from that source needs to support the themes.

Things to notice

- Does the publication support the park or organizations planning documents?

- Does the publication include information relating to and supporting park management's Long Range Interpretive Themes?

Rubric for *Content Guidelines for Interpretive Excellence*

Content Guidelines for Interpretive Excellence Rubric

	5	4	3	2	1
#1 Background (settings, condition): **1.1** Orientation (type of publication) **1.2** Date **1.3** Author's Background **1.4** NPS/SNHA endorsed **1.5** Length (# of pages)	The background of the source is exceptionally suitable. The orientation, date, endorsement, and length are extremely conducive for use in interpretation.	The background of the source is more than suitable. The orientation, date, endorsement, and length are more than conducive for use in interpretation.	The background of the source is suitable. The orientation, date, endorsement, and length are for the most part conducive for use in interpretation.	The background of the source is less than suitable. The orientation, date, endorsement, and length are only partially conducive for use in interpretation.	The background of the source is not suitable. The orientation, date, endorsement, and length are not conducive at all for use in interpretation.
#2 Integrity (sincerity, soundness): **2.1** Credibility **2.2** Verifiability **2.3** Objectivity	The integrity of the source is exceptionally suitable. The level of credibility, verifiability, and objectivity are extremely conducive for use in interpretation.	The integrity of the source is more than suitable. The level of credibility, verifiability, and objectivity are more than conducive for use in interpretation.	The integrity of the source is suitable. The level of credibility, verifiability, and objectivity are for the most part conducive for use in interpretation.	The integrity of the source is less than suitable. The level of credibility, verifiability, and objectivity are only partially conducive for use in interpretation.	The integrity of the source is not suitable. The level of credibility, verifiability, and objectivity are not conducive at all for use in interpretation.
#3 Scope (range, capacity): **3.1** Comprehensiveness **3.2** Technicality **3.3** Foundation (Ecological, Scientific, Historical, Cultural)	The scope of the source is exceptionally suitable. The level of comprehensiveness, technicality, and type(s) of foundation are extremely conducive for use.	The scope of the source is more than suitable. The level of comprehensiveness, technicality, and type(s) of foundation are more than conducive for use in interpretation.	The scope of the source is suitable. The level of comprehensiveness, technicality, and type(s) of foundation are for the most part conducive for use in interpretation.	The scope of the source is less than suitable. The level of comprehensiveness, technicality, and type(s) of foundation are only partially conducive for use in interpretation.	The scope of the source is not suitable. The level of comprehensive ness, technicality, and type(s) of foundation are not conducive at all for use in interpretation.

	5	4	3	2	1
#4 Usability (utilization, application): **4.1** Accessibility **4.2** Presentation **4.3** Organization	The usability of the source is exceptionally suitable. The level of accessibility, presentation, and organization are extremely conducive for use in interpretation.	The usability of the source is more than suitable. The level of accessibility, presentation, and organization are more than conducive for use in interpretation.	The usability of the source is suitable. The level of accessibility, presentation, and organization are for the most part conducive for use in interpretation.	The usability of the source is less than suitable. The level of accessibility, presentation, and organization are only partially conducive for use in interpretation.	The usability of the source is not suitable. The level of accessibility, presentation, and organization are not conducive at all for use in interpretation.
#5 Balance (equality, fairness): **5.1** Multiple viewpoints and theories **5.2** Acknowledgement of Diversity **5.3** Openness to inquiry	The balance of the source is exceptionally suitable. The amount of multiple viewpoints, diversity, and openness to inquiry is extremely conducive for use in interpretation.	The balance of the source is more than suitable. The amount of multiple viewpoints, diversity, and openness to inquiry is more than conducive for use in interpretation.	The balance of the source is suitable. The amount of multiple viewpoints, diversity, and openness to inquiry is for the most part conducive for use in interpretation.	The balance of the source is less than suitable. The amount of multiple viewpoints, diversity, and openness to inquiry is only partially conducive for use in interpretation.	The balance of the source is not suitable. The amount of multiple viewpoints, diversity, and openness to inquiry is not conducive at all for use in interpretation.
#6 Relevance (application, significance): **6.1** Mission Statement **6.2** Planning Documents	The relevance of the source is exceptionally suitable. The adherence to mission statements and planning documents are extremely conducive for use in interpretation.	The relevance of the source is more than suitable. The adherence to mission statements and planning documents are more than conducive for use in interpretation.	The relevance of the source is suitable. The adherence to mission statements and planning documents are conducive for use in interpretation.	The relevance of the source is less than suitable. The adherence to mission statements and planning documents are only partially conducive for use in interpretation.	The relevance of the source is not suitable. The adherence to mission statements and planning documents are not conducive at all for use in interpretation.

Rubric for Content Guidelines for Interpretive Excellence

The rubric for Content Guidelines for Interpretive Excellence is a means to evaluate potential interpretive sources (materials) by consistent methods. There are numerical rating levels that reflect the source's ability to meet each of the six key attributes that comprise of the guidelines. The levels correspond to statements ranging from exceptionally suitable (number five) to not suitable (number one). The rubric is used to assess if the potential interpretive sources are quality. On the attached evaluation form there is a chart that appears like the one below:

Source Citation (author, year, title, publisher):

_____

Attribute Number	Numerical Rating Level	
1		
2		
3		
4		
5		
6		
	Total	

Total Numerical Rating _____ / 6 = Total Rubric Score _____

This chart is to record the numerical rating level the evaluator (interpreter) gives each source. After the numerical ratings are added together, they are written next to **Total.** Then that total is divided by six (the total number of key attributes that make up the guidelines). The resulting number is the score for that source. The highest score a source can receive is five. The lowest score is one.

The rubric is a formal and measurable way to assess and compare potential interpretive sources. The guidelines themselves and/or the rubric can stand alone as a means to evaluate sources. This rating scale just goes one step further to act as a tool to measure and differentiate between each source.

Rubric Evaluation Form

1.) Source Citation (author, year, title, publisher) :

_____

Attribute Number	Numerical Rating Level	
1		
2		
3		
4		
5		
6		
	Total	

Total Numerical Rating _____ / 6 = Total Rubric Score

_____

2.) Source Citation (author, year, title, publisher) :

_____

Attribute Number	Numerical Rating Level	
1		
2		
3		
4		
5		
6		
	Total	

Total Numerical Rating _____ / 6 = Total Rubric Score _____

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